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WATER SUPPLY OUTLOOK FOR ARIZONA



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

**SALT RIVER VALLEY WATER USERS ASSOCIATION
and
ARIZONA WATER COMMISSION**

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

AS OF
APR. 1, 1977

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SNOW COURSE MEASUREMENTS BY A SURVEY TEAM IN UTAH'S WASATCH RANGE.
ORC-254-10

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, 6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR ARIZONA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

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ARIZONA WATER COMMISSION

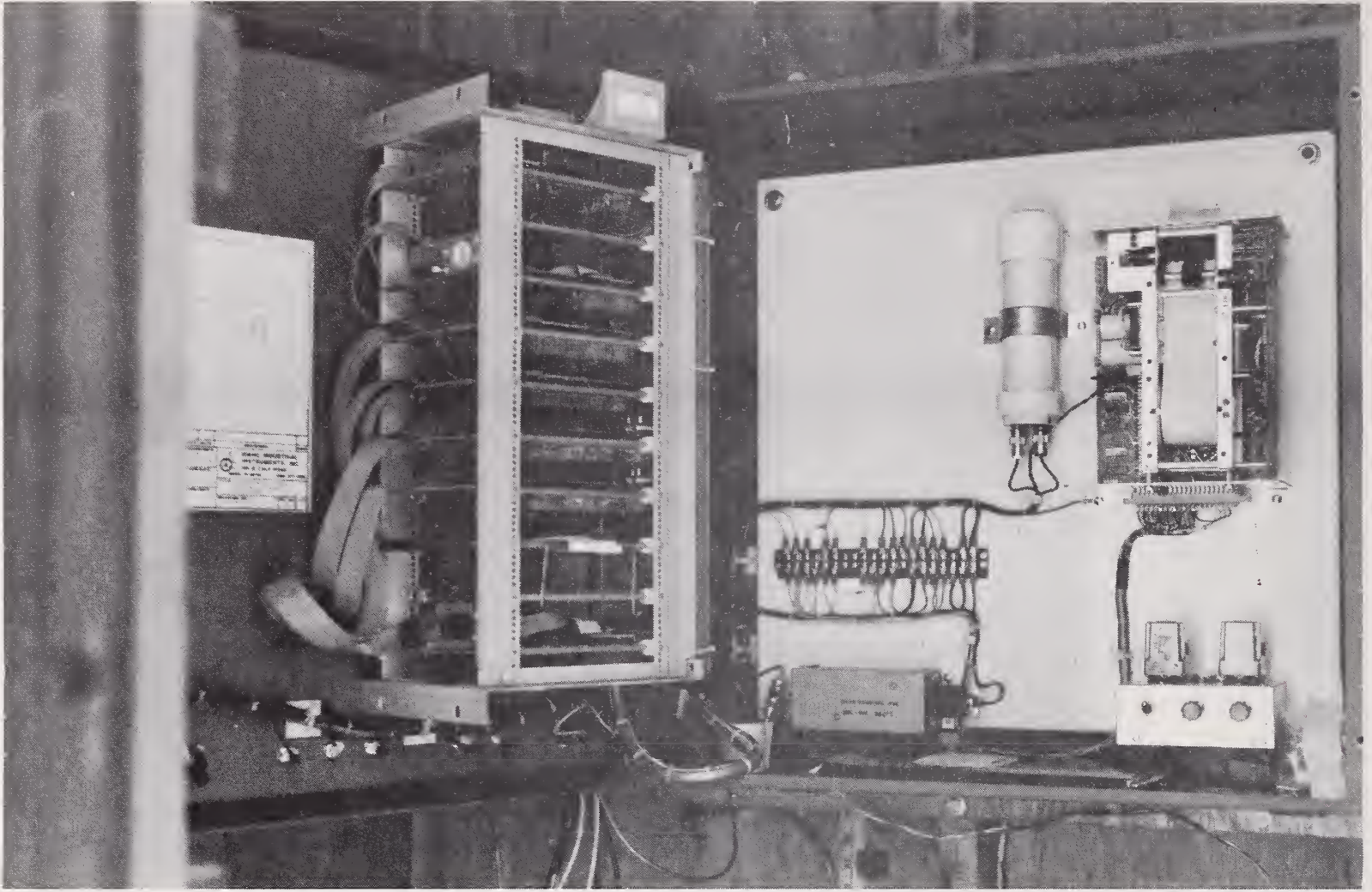
KARL F. ABEL
PRESIDENT
SALT RIVER VALLEY WATER
USERS ASSOCIATION

|||||

Report prepared by

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ROOM 3008 FEDERAL BUILDING
PHOENIX, ARIZONA 85025



Data Acquisition System inside remote site shelter.

ARIZONA SUMMARY
as of
APRIL 1, 1977

THE WATER SUPPLY OUTLOOK FOR ARIZONA IS STILL POOR, ALTHOUGH SOME IMPROVEMENT HAS OCCURRED.

SPRING RUNOFF WILL BE MUCH BELOW AVERAGE, BUT RESERVOIR STORAGE (EXCEPT FOR SAN CARLOS) IS GENERALLY NOT TOO FAR BELOW NORMAL.

WATER SUPPLY OUTLOOK

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SNOW COVER

Arizona finally received a heavy snowfall after three months of much below average storm activity. By March 25 most of the snow below 8000 feet had melted, leaving only patches of snow on the shady north slopes. As of March 31, however, when most snow surveys were made, there was a significant amount of snow on almost all snow courses. The Verde Watershed did not fare as well as the White Mountains in March, but by April 3 they had 12 to 24" of new snow at the 7000' level. The Verde Watershed snow measurements do not reflect this more recent storm.

As of April 1 snow cover varied from 31% of average on the Verde to 83% on the Gila with the Salt and Little Colorado Watersheds 51 and 58% of average respectively. Based on high elevation snow cover, this year is the third lowest in the last 15 years.

PRECIPITATION

Although most of March was very dry, the month-end storm raised precipitation totals above average for the month at several stations in the White Mountains. Since November 1, however, accumulated precipitation is still close to half of normal on all watersheds.

SOIL MOISTURE

The recent storms have improved surface soil moisture greatly, but the lower levels of the soil profile are still below average. The slowly melting snow during March was almost completely absorbed by the soil resulting in very low runoff. The present snowpack and additional storms in the near future, however, should produce much better yields.

RESERVOIR STORAGE

Reservoir storage is above average in the Colorado River reservoirs, somewhat below average on the Salt River Project, and much below average in Lake Pleasant and San Carlos Reservoir. Lake Pleasant, containing 20% of capacity, is just 50% of average for this date. San Carlos is virtually empty with present storage less than 1% of capacity and 3% of average. No significant inflow is expected this spring.

STREAMFLOW

Total spring runoff (January-May) will be much below average throughout the state. Streamflow forecasts range from 20% of average on the Little Colorado River to 38% on the Verde. The Gila and Salt Rivers are expected to produce 25 and 28% of average respectively.

Water supplies will be adequate for most irrigation projects served by reservoir storage. The San Carlos Project, however, will be very short, requiring reductions in crop acreage and heavy pumping. Areas depending on direct diversions such as the Safford Valley will also require heavy supplemental pumping.

THIS IS THE FINAL REPORT FOR THE 1977 SEASON.

STREAMFLOW FORECASTS ABOUT APRIL 1,
1977

STREAMFLOW FORECASTS		1977		THIS YEAR		PAST RECORD	
BASIN, STREAM and/or FORECAST POINT		FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET		
		Thousand Acre Feet	Percent of Average		Last Year	Average †	
<u>SALT RIVER DRAINAGE</u>							
Salt near Roosevelt		50	35	Apr-May	125.9	142.6	
"		33	33	April	72.2	99.3	
Tonto Creek near Roosevelt		3	36	Apr-May	14.2	8.4	
"		2	29	April	11.1	7.0	
Verde River above Horseshoe		25	46	Apr-May	83.4	54.0	
"		15	34	April	66.3	43.9	
Total Salt River Project Streams		78	38	Apr-May	223.5	205.0	
"		50	33	April	149.6	150.2	
<u>GILA RIVER DRAINAGE</u>							
Gila River at Calva		4	17	Apr-May	4.2	23.5	
Gila River near Gila		12	60	Apr-May	15.3	20.0	
Gila River near Solomon		16	36	Apr-May	23.3	44.3	
"		10	31	April	12.7	31.8	
Gila River near Virden		9	39	Apr-May	16.9	22.8	
Frisco River at Clifton		8	34	Apr-May	11.2	23.6	
Frisco River at Glenwood		3.5	33	Apr-May	4.4	10.7	
<u>LITTLE COLORADO RIVER DRAINAGE</u>							
Little Colo. River above Lyman Dam		1.3	17	Apr-June	5.6	7.8	
Greer 1/		2.7	47	Apr-June	2.9	5.7*	
<u>GRANITE CREEK DRAINAGE</u>							
Granite Creek		0.4	--	Apr-May	---	---	
Willow Creek		0.2	--	Apr-May	---	---	
<u>MIMBRES RIVER DRAINAGE</u>							
Mimbres River near Mimbres		0.9	56	Apr-May	1.1	1.6	
<u>COLORADO RIVER DRAINAGE</u>							
Virgin River nr. Littlefield		10	23	Apr-June	18.9	43.2	
Colorado River -- Lake Powell Inflow (Issued by SCS, Utah)		2150	31	Apr-July	5,395.0	6,881.0	
Lake Mary Inflow		0.4	27	Apr-May	--	1.5	
1/ Includes Filler Ditch Diversion. † Based on 15-year period, 1958-72.							
* Average is for less than 15 years.							

1977

SPRING RUNOFF

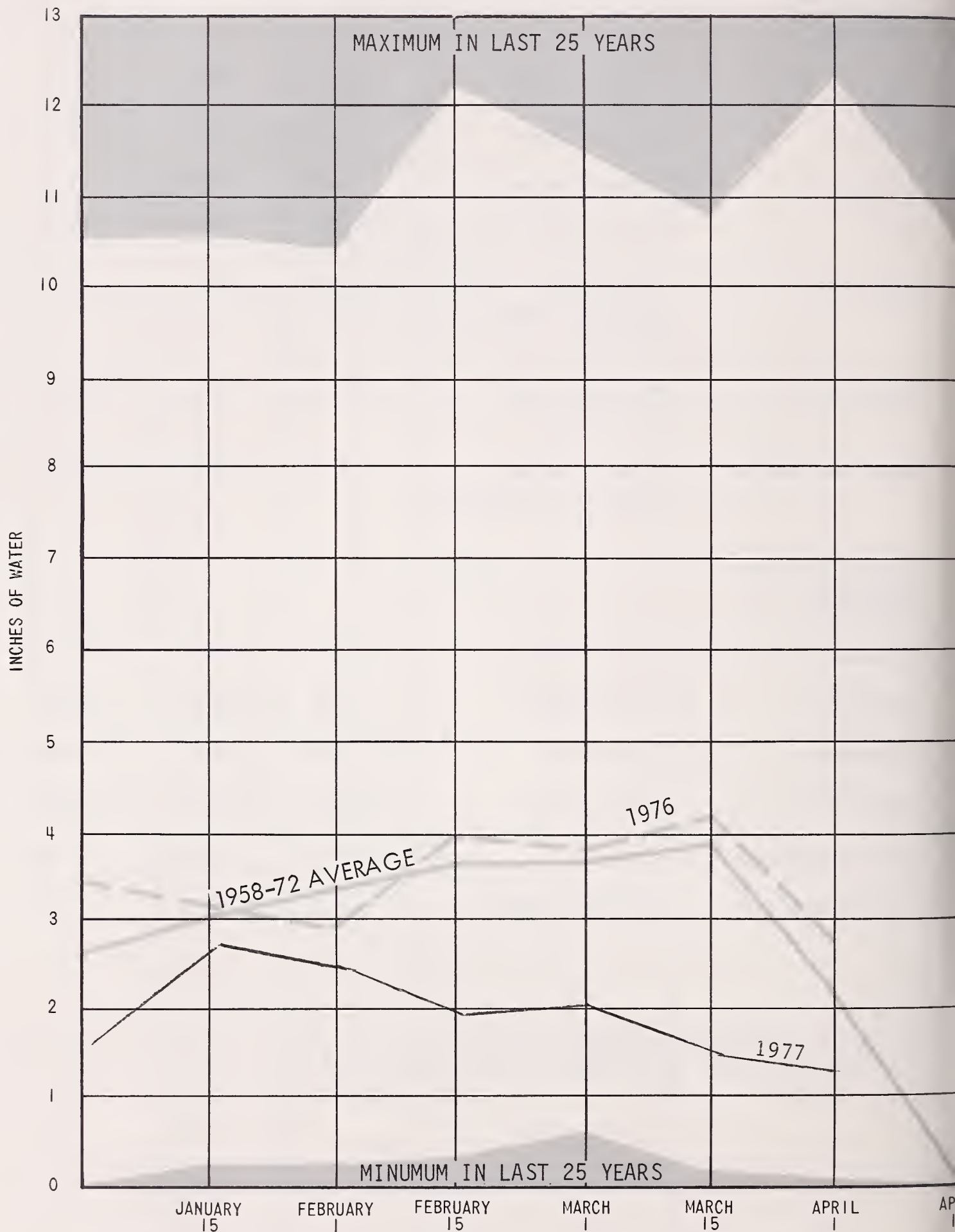
Stream and Station	Measured <u>1/</u> Runoff Jan-March	Forecast Runoff April-May	Total-January thru May		
			1977	% of Average	Last Year
Salt River at Intake	40	50	90	28	240
Verde River above Horseshoe	47	25	72	38	308
Tonto Creek above Roosevelt	5	3	8	17	74
Gila River near Virden	13	9	22	29	62
Gila River near Solomon	23	16	39	25	94
Gila River near Calva	17	4	21	19	40
Frisco River at Clifton	10	8	18	23	41
Little Colorado (Jan-June)	1.1	1.3	2.4	21	7

1/ Provisional runoff provided by USGS

RESERVOIR STORAGE (Thousand Acre Feet) MID-MONTH READING ABOUT APRIL 1, 1977

BASIN or STREAM	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
<u>GILA RIVER DRAINAGE</u>					
Agua Fria	Lake Pleasant	157.6	30.8	50.6	62.3
Granite	Watson Lake	4.7	2.4	4.5	3.5*
Granite	Willow Creek	6.1	1.1	2.6	3.0*
Gila	San Carlos	1,093	6.3	131.7	199.7
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1,755	935.1	1,129.4	1,145
Verde (2)	Bartlett and Horseshoe	317.7	9.1	160.7	158.2
Salt and Verde	6 Salt River Project Reservoirs	2,073	944.2	1,290.1	1,303
<u>COLORADO RIVER DRAINAGE</u>					
Colorado	Lake Havasu	619.4	566.9	537.5	555.4
Colorado	Lake Mohave	1,810	1704.2	1,681	1,675
Colorado	Lake Mead	26,159	21,435	20,528	16,927
Colorado	Lake Powell	25,002	17,940	19,838	7,352
Little Colorado	Lyman	30.6	15.6	21.2	15.0
Little Colorado	Show Low Lake	5.1	0.8	1.8	2.4
† Based on 15-year period, 1958-72					
* Average is for less than 15 years of record					

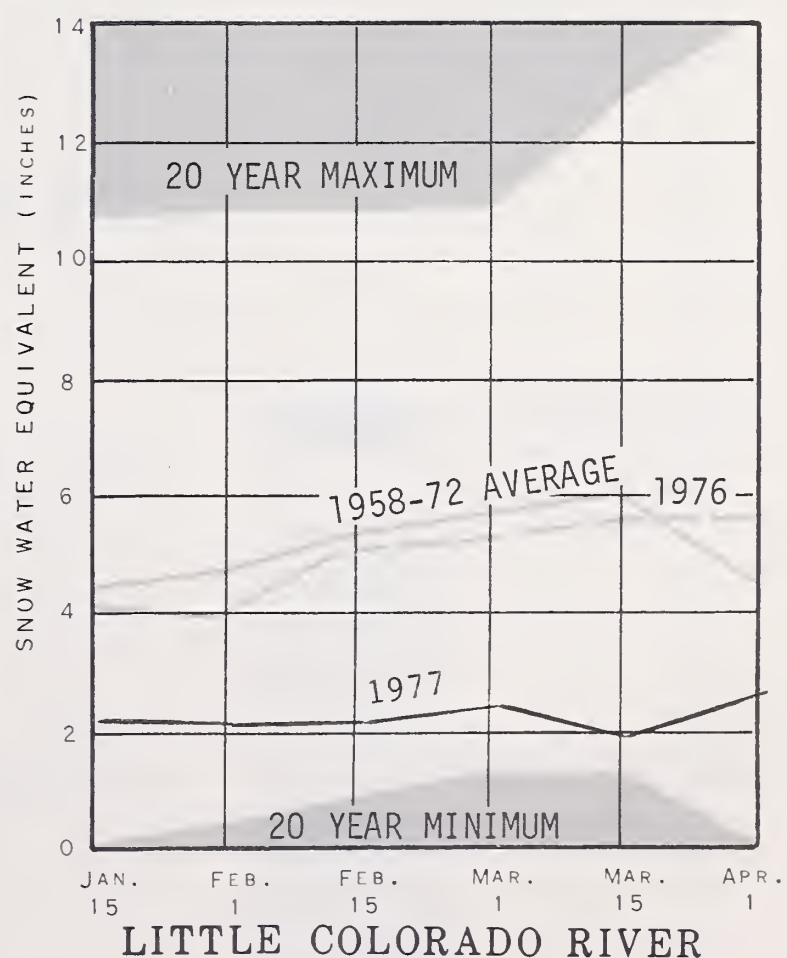
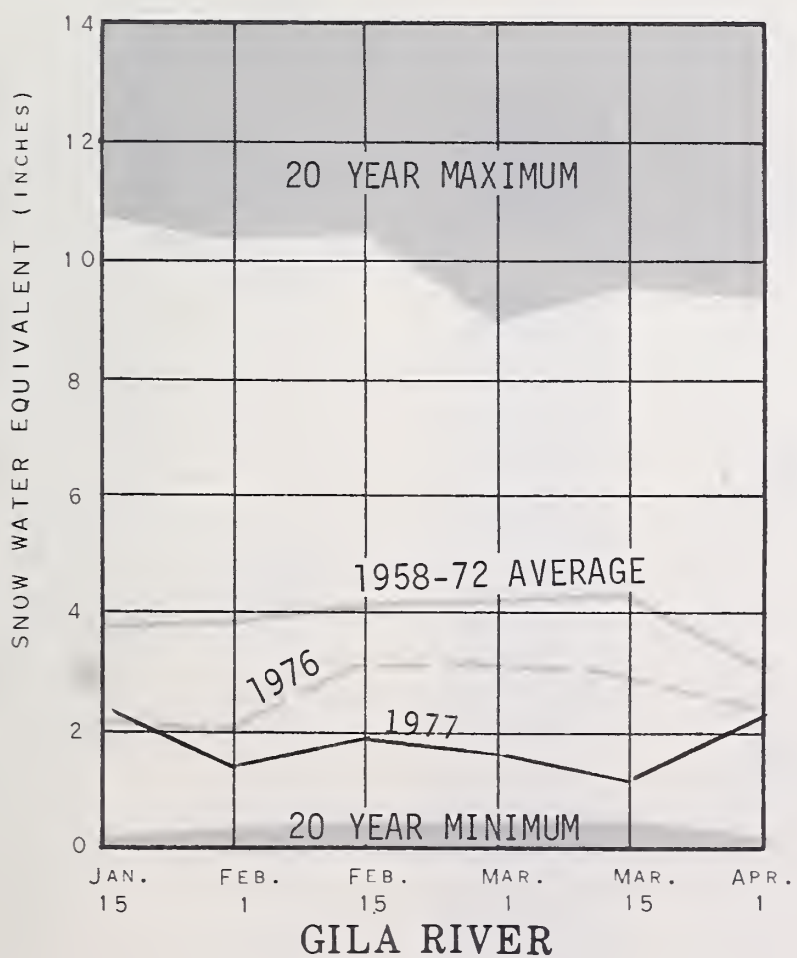
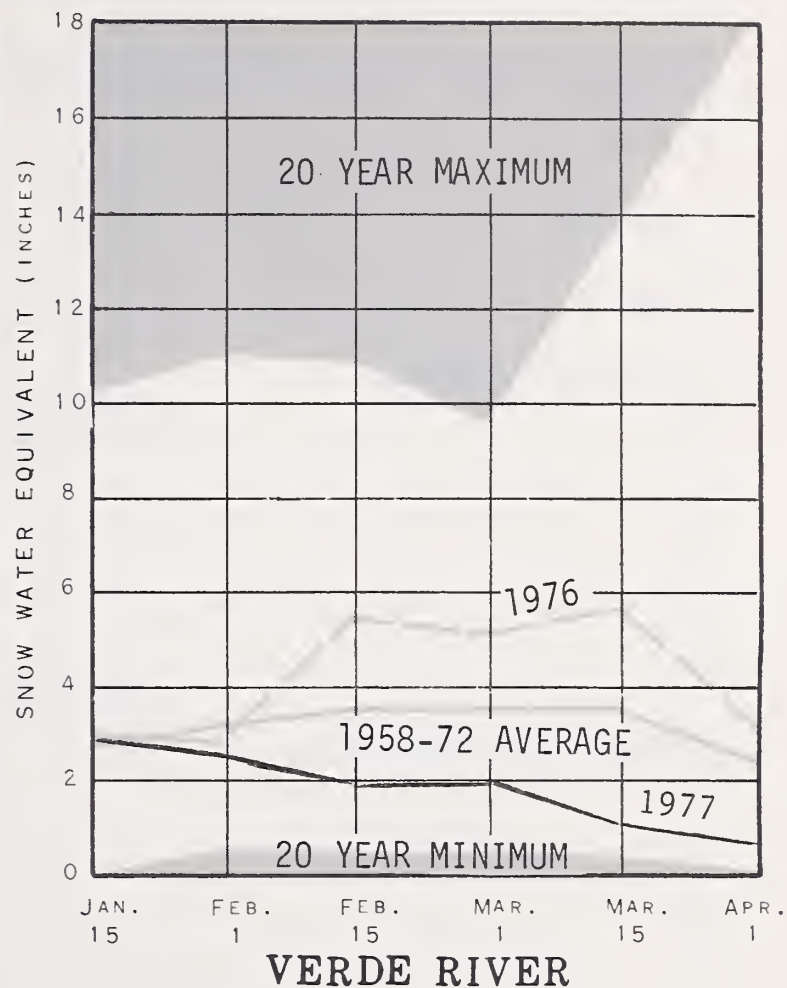
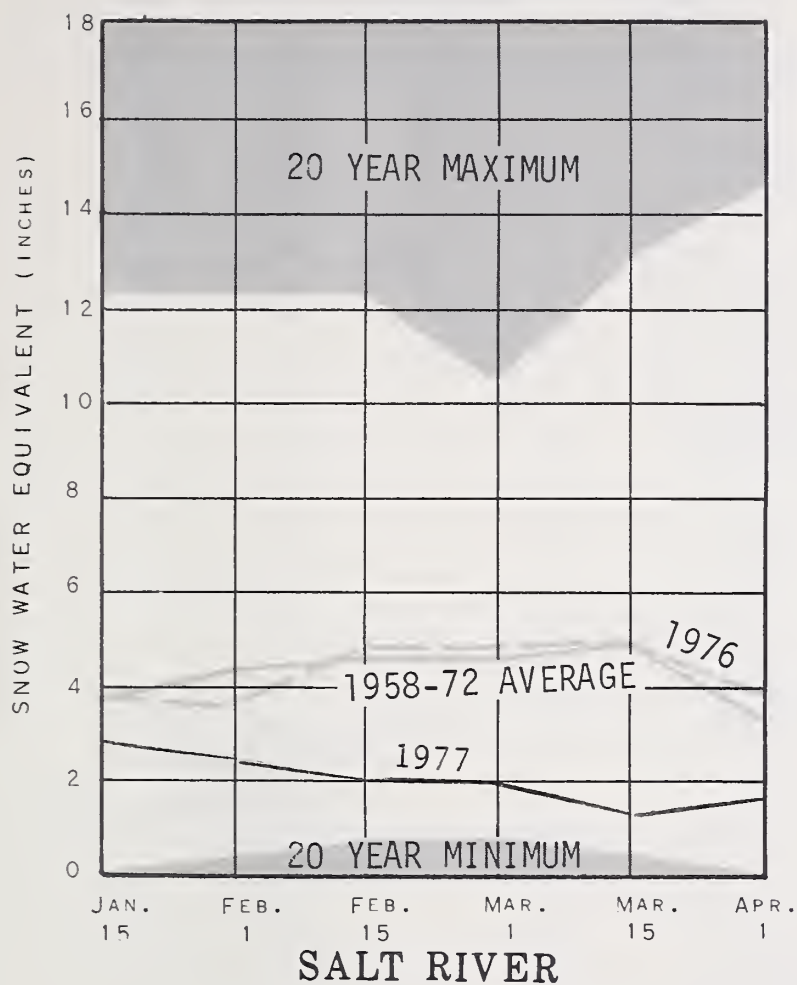
AVERAGE SNOW COVER ARIZONA 1977



This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

1977

WATERSHED SNOW COVER



BASED ON SELECTED SNOW SURVEY COURSES

SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS) ABOUT APRIL 1, 1977

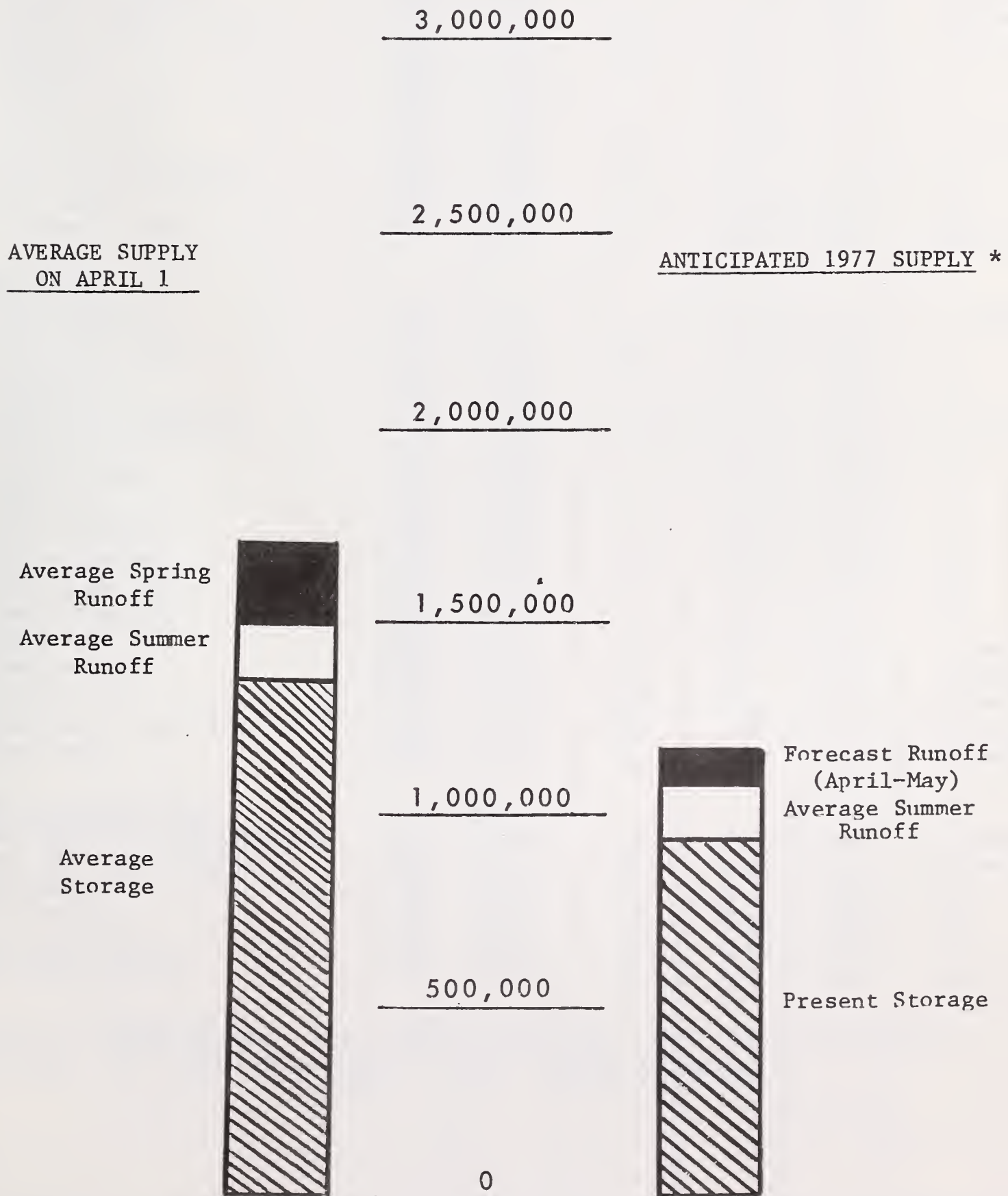
RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
Gila	10	99	83
Salt	10	47	51
Verde	10	28	31
Little Colorado	5	48	58

+ 1958-1972 period.

WATER SUPPLY INVENTORY SALT RIVER VALLEY SYSTEM

IN ACRE-FEET

APRIL 1, 1977



Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff

SNOW ABOUT MARCH 15, 1977

SNOW ABOUT MARCH 15, 1977		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>GILA RIVER</u>						
Bear Wallow	8100	3/14	1	0.3	0.6	5.0
Beaver Head	8000	3/14	T	0.2	0.6	2.8
Coronado Trail	8000	3/14	0	0.0	0.1	2.2
Emory Pass #1 *	7800	3/14	0	0.0	0.0	0.3**
Emory Pass #2 *	7800	3/14	T	0.2	0.0	0.7**
Frisco Divide	8000	3/14	T	0.1	0.8	1.9
Hannagan Meadows *	9090	3/14	9	2.6	10.6	8.9**
Hummingbird (A)	10550	3/15	24	8.0	13.6	16.3**
McKnight Cabin * (A)	9300	3/14	10	3.1	1.2	2.5**
Mogollon	7000	3/13	0	0.0	0.0	1.2
Nutriosio	8500	3/14	0	0.0	0.5	1.4
Redstone Trail	8600	3/13	15	4.8	7.2	7.4**
Rose Canyon	7300	3/14	0	0.0	0.2	2.0
Silver Creek Divide	9000	3/14	23	6.6	9.8	12.2**
State Line	8000	3/14	0	0.0	0.0	1.8
Whitewater (A)	10750	3/15	48	10.6	16.2	20.3**
<u>VERDE RIVER</u>						
Baker Butte	7300	3/14	1	0.9	9.7	5.0**
Baker Butte #2	7700	3/14	16	6.5	21.5	---
Camp Wood	5700	3/15	0	0.0	0.0	0.4
Chalender *	7100	3/14	1	0.3	3.8	2.2
Copper Basin Divide	6720	3/14	0	0.0	0.7	1.2**
Fort Valley	7350	3/14	0	0.0	0.7	2.0
Gaddes Canyon	7600	3/14	6	2.0	7.1	5.3
Happy Jack	7630	3/14	1	0.4	5.2	2.6
Iron Springs *	6200	3/14	0	0.0	0.2	0.4
Mingus Mountain	7100	3/14	0	0.0	0.0	0.7
Mormon Lake *	7350	3/14	6	2.5	7.4	3.4
Mormon Mountain	7500	3/14	5	2.1	10.1	4.7
Newman Park	6750	3/14	0	0.0	0.8	1.5**
Snow Bowl #1	10260	3/14	14	4.1	11.9	9.9**
Snow Bowl #2	11000	3/14	21	5.4	18.7	18.0**
White Horse Lake Jct.	7150	3/15	0	0.0	4.3	3.2**
White Spar	6000	3/14	0	0.0	0.0	0.4**
<u>LOWER COLORADO RIVER</u>						
Bill Williams Intermediate	8550	3/15	13	3.5	13.7	8.0**
Bill Williams Summit	8950	3/15	20	4.8	16.6	11.1**
Chalender *	7100	3/14	1	0.3	3.8	2.2
Fort Valley	7350	3/14	0	0.0	0.7	2.0
Grand Canyon	7500	3/14	0	0.0	0.0	1.2
Williams Ski Run	7720	3/15	16	4.5	13.2	7.0**
+ 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: water content estimated.						

SNOW ABOUT MARCH 15, 1977

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
					Last Year	Average †
NAME	Elevation					
SALT RIVER						
Baldy *	9125	3/14	9	2.9	8.6	7.5
Beaver Head	8000	3/14	T	0.2	0.6	2.8
Canyon Creek	7500	3/14	2	1.0	4.9	3.1
Canyon Point	7600	3/14	3	1.2	4.6	3.8**
Coronado Trail	8000	3/14	0	0.0	0.1	2.2
Forest Dale	6430	3/14	0	0.0	0.0	0.4
Ft. Apache	9160	3/14	13	3.1	8.1	8.0
Hannagan Meadows	9090	3/14	9	2.6	10.6	8.9**
Hawley Lake	8300	3/14	10	4.1	8.4	6.4**
Heber	7600	3/14	3	1.2	4.3	3.3
Maverick Fork	9050	3/14	13	4.8	12.9	8.9
McNary	7200	3/14	T	0.1	1.1	2.0
Milk Ranch	7000	3/14	0	0.0	0.0	0.8
Mt. Ord (A)	11000	3/16	48	12.5	---	23.8**
Nutriosos *	8500	3/14	0	0.0	0.5	1.4
Promontory Butte	7930	3/14	18	7.2	18.0	---
Smith Cienega (A)	9850	3/16	30	8.1	---	17.7**
Sunrise Summit	10600	3/14	28	7.9	15.9	---
Wilson Lake	9000	3/14	20	4.6	10.5	11.4**
Workman Creek	6900	3/14	T	0.2	5.6	4.9
LITTLE COLORADO RIVER						
Baldy	9125	3/14	9	2.9	8.6	7.5
Canyon Creek	7500	3/14	2	1.0	4.9	3.1
Canyon Point	7600	3/14	3	1.2	4.6	3.8**
Cheese Springs	8600	3/14	12	4.0	6.0	8.7**
Forest Dale	6430	3/14	0	0.0	0.0	0.4
Ft. Apache	9160	3/14	13	3.1	8.1	8.0
Fort Valley	7350	3/14	0	0.0	0.7	2.0
Happy Jack *	7630	3/14	1	0.4	5.2	2.6
Heber	7600	3/14	3	1.2	4.3	3.3
Inner Basin #1	10100	N O	S U R V E Y		19.3	---
Inner Basin #2	9750	N O	S U R V E Y		13.6	---
Lake Mary	6970	3/14	1	0.3	6.9	---
McNary	7200	3/14	T	0.1	1.1	2.0
Mormon Lake	7350	3/14	6	2.5	7.4	3.4
Mormon Mountain	7500	3/14	5	2.1	10.1	4.7
Nutriosos *	8500	3/14	0	0.0	0.5	1.4
Promontory Butte	7930	3/14	18	7.2	18.0	---
Snow Bowl #1	10260	3/14	14	4.1	11.9	9.9**
Snow Bowl #2	11000	3/14	21	5.4	18.7	18.0**
Wilson Lake	9000	3/14	20	4.6	10.5	11.4**
† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: water content estimated.						

SNOW ABOUT APRIL 1, 1977

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>GILA RIVER</u>						
Bear Wallow	8100	3/30	2	0.8	0.0	2.9
Beaver Head	8000	3/31	8	1.7	0.6	1.7
Coronado Trail	8000	3/31	7	1.3	0.7	0.7
Emory Pass #1 *	7800	3/31	0	0.0	0.0	0.0**
Emory Pass #2 *	7800	3/31	2	0.6	0.0	0.0**
Frisco Divide	8000	3/31	6	1.2	0.6	0.6
Hannagan Meadows *	9090	3/31	13	3.8	9.2	8.0**
Hummingbird (A)	10550	3/31	38	9.5	14.0	15.1**
McKnight Cabin * (A)	9300	3/31	3	1.0	---	2.4**
Mogollon	7000	3/30	6	1.5	0.0	0.0
Nutrioso	8500	3/31	6	1.1	0.3	0.5
Redstone Trail	8600	3/31	27	6.1	5.1	7.0**
Rose Canyon	7300	3/30	0	0.0	0.0	0.5
Silver Creek Divide	9000	3/30	34	7.8	8.4	11.5**
State Line	8000	3/31	1	0.3	0.6	0.6
Whitewater (A)	10750	3/31	62	13.6	17.9	20.2**
<u>VERDE RIVER</u>						
Baker Butte	7300	3/30	1	0.2	4.5	3.6**
Baker Butte #2	7700	3/30	17	6.3	19.1	---
Camp Wood	5700	3/31	0	0.0	0.0	0.1
Chalender *	7100	3/31	0	0.0	0.0	1.0
Copper Basin Divide	6720	3/31	0	0.0	0.0	0.0**
Fort Valley	7350	3/31	0	0.0	0.0	1.1
Gaddes Canyon	7600	3/28	8	1.7	5.3	3.6
Happy Jack	7630	3/31	0	0.0	0.4	1.4
Iron Springs *	6200	3/31	0	0.0	0.0	0.1
Mingus Mountain	7100	3/28	0	0.0	0.0	0.1
Mormon Lake *	7350	3/31	2	1.0	1.9	1.7
Mormon Mountain	7500	3/31	1	0.5	5.2	3.0
Newman Park	6750	3/31	0	0.0	0.0	0.6**
Snow Bowl #1	10260	3/31	17	4.5	11.2	10.3**
Snow Bowl #2	11000	3/31	36	8.8	17.2	19.5**
White Horse Lake Jct.	7150	3/31	0	0.0	0.0	1.2**
White Spar	6000	3/31	0	0.0	0.0	0.0**
Mormon Mt. Summit	8470	3/31	21	7.1	22.1	---
<u>LOWER COLORADO RIVER</u>						
Bill Williams Intermediate	8550	3/31	14	3.6	11.8	6.3**
Bill Williams Summit	8950	3/31	23	5.6	15.9	9.3**
Chalender *	7100	3/31	0	0.0	0.0	1.0
Fort Valley	7350	3/31	0	0.0	0.0	1.1
Grand Canyon	7500	3/31	0	0.0	0.0	0.6
Williams Ski Run	7720	3/31	17	4.5	12.2	5.8**

† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: water content estimated.

SNOW ABOUT APRIL 1, 1977

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>SALT RIVER</u>						
Baldy *	9125	3/31	9	2.4	7.6	6.2
Beaver Head	8000	3/31	8	1.7	0.6	1.7
Canyon Creek	7500	3/30	5	1.0	1.3	1.3
Canyon Point	7600	3/30	7	1.5	0.9	1.2**
Coronado Trail	8000	3/31	7	1.3	0.7	0.7
Forest Dale	6430	3/31	0	0.0	0.0	0.0
Ft. Apache	9160	3/31	13	3.1	7.3	6.3
Hannagan Meadows	9090	3/31	13	3.8	9.2	8.0**
Hawley Lake	8300	3/31	8	2.0	3.9	3.6**
Heber	7600	3/30	6	1.1	1.4	1.5
Maverick Fork	9050	3/31	9	2.0	9.9	7.5
McNary	7200	3/29	5	1.0	0.9	0.4
Milk Ranch	7000	3/31	2	0.5	0.3	0.1
Mt. Ord (A)	11000	3/28	57	16.2	27.5	26.4**
Nutriososo *	8500	3/31	6	1.1	0.3	0.5
Promontory Butte	7930	3/30	21	6.8	14.6	---
Smith Cienega (A)	9850	---	---	---	20.4	19.8**
Sunrise Summit	10600	3/30	42	9.6	17.4	---
Wilson Lake	9000	3/30	26	5.4	10.8	9.0**
Workman Creek	6900	3/28	5	0.6	0.0	2.8
<u>LITTLE COLORADO RIVER</u>						
Baldy	9125	3/31	9	2.4	7.6	6.2
Canyon Creek	7500	3/30	5	1.0	1.3	1.3
Canyon Point	7600	3/30	7	1.5	0.9	1.2**
Cheese Springs	8600	3/30	15	2.2	4.7	7.4**
Forest Dale	6430	3/31	0	0.0	0.0	0.0
Ft. Apache	9160	3/31	13	3.1	7.3	6.3
Fort Valley	7350	3/31	0	0.0	0.0	1.1
Happy Jack *	7630	3/31	0	0.0	0.4	1.4
Heber	7600	3/30	6	1.1	1.4	1.5
Inner Basin #1	10100	4/5	36	10.3	20.9	17.3**
Inner Basin #2	9750	4/5	22	7.5	14.2	10.2**
Lake Mary	6970	3/31	0	0.0	0.0	---
McNary	7200	3/29	5	1.0	0.9	0.4
Mormon Lake	7350	3/31	2	1.0	1.9	1.7
Mormon Mountain	7500	3/31	1	0.5	5.2	3.0
Nutriososo *	8500	3/31	6	1.1	0.3	0.5
Promontory Butte	7930	3/30	21	6.8	14.6	---
Snow Bowl #1	10260	3/31	17	4.5	11.2	10.3**
Snow Bowl #2	11000	3/31	36	8.8	17.2	19.5**
Wilson Lake	9000	3/30	26	5.4	10.8	9.0**
Mormon Mt. Summit #2	8470	3/31	21	7.1	22.1	---
+ 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: water content estimated.						
<u>LATE REPORTS</u>						
Agassiz		3/3	30	7.8	20.0	---
Inner Basin #1 (Bear Paw)		3/3	25	6.6	17.5	17.4
Inner Basin #2 (Snowslide Canyon)		3/3	20	4.9	12.0	11.0

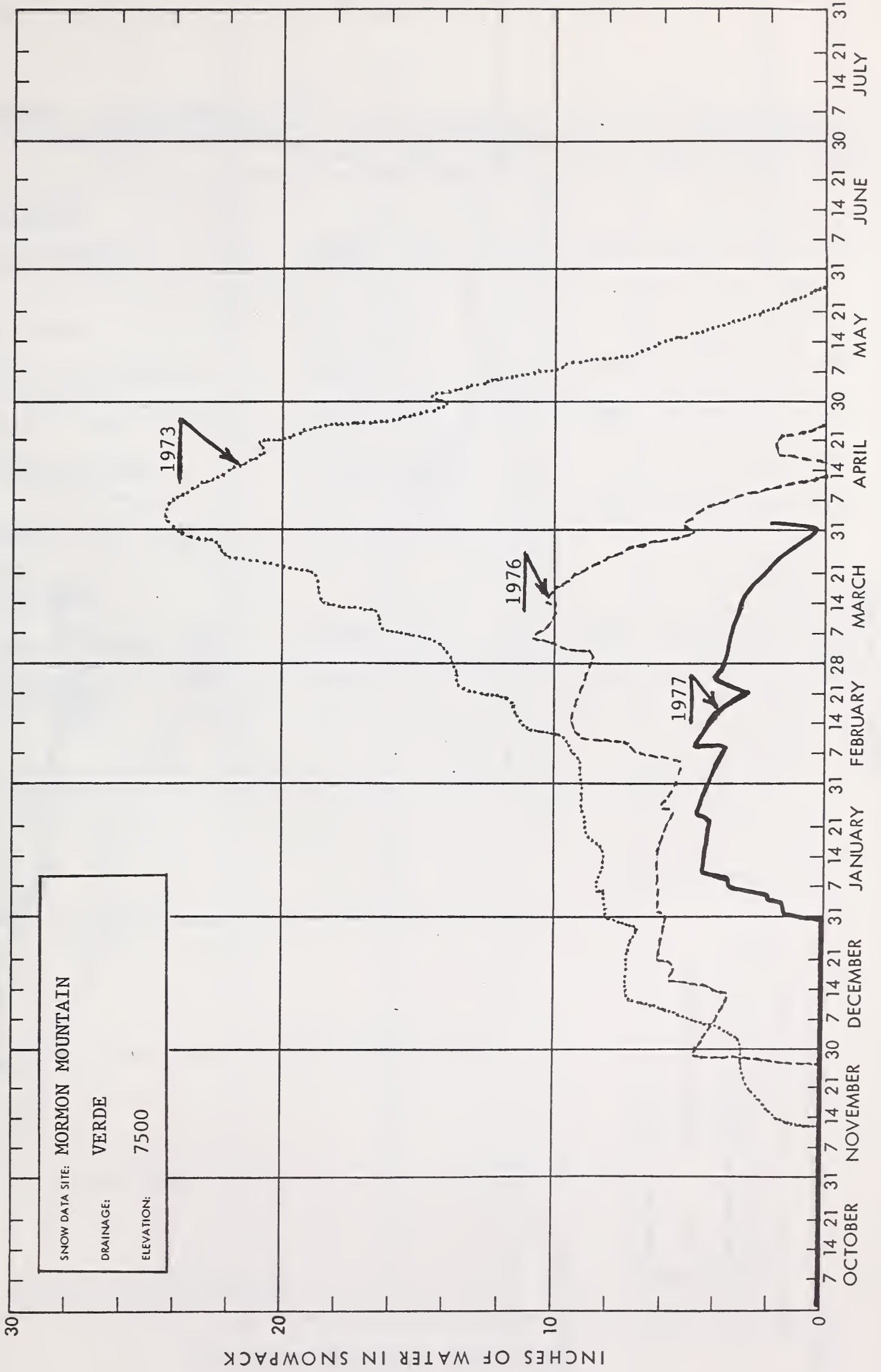
PRECIPITATION (Inches) ABOUT APRIL 1, 1977

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average †	This Year	Average †	Percent of Average
<u>GILA RIVER</u>							
Silver Creek Divide	9000	3/30	3.50	2.41*	11.61	14.23*	82
Hannagan Meadows **	9030	3/31	2.50	2.21	8.00	12.80	63
Frisco Divide **	8000	3/31	1.55	---	4.35	---	--
<u>SALT RIVER</u>							
Canyon Point	7600	3/30	2.09	3.67*	9.55	17.17*	56
Hannagan Meadows **	9030	3/31	2.50	2.21	8.00	12.80	63
Little Wildcat (Heber Snow Course)	7600	3/30	1.93	2.96	9.11	14.46	63
Maverick Fork	9050	3/31	2.15	2.24	8.69	12.26	71
Workman Creek **	6970	3/28	1.20	3.00	8.97	17.28	52
Wilson Lake	9100	3/30	2.45	2.50*	7.65	12.99*	59
<u>VERDE RIVER</u>							
Baker Butte	7300	3/30	1.14	3.37*	7.78	17.32*	45
Copper Basin Divide	6720	3/31	.95	2.43*	6.37	11.52*	55
Fort Valley **	7350	3/30	.83	2.06	4.24	9.08	47
Happy Jack **	7480	3/31	.87	2.27	6.38	11.37	56
Mingus Mountain	7660	3/28	1.30	2.13	5.13	9.99	51
Mormon Mountain	7500	3/31	1.55	3.03*	9.09	16.17*	56
White Horse Lake Jct.**	7150	3/31	1.00	---	5.84	---	--
<u>LITTLE COLORADO</u>							
Inner Basin #1	9830	4/5	3.38	3.01	8.78	15.84	55
Inner Basin #2	10050	4/5	5.05	3.49*	12.58	18.16*	69
Greer Lakes	8500	3/31	1.85	1.15	4.61	7.13	65
Little Wildcat (Heber Snow Course)	7600	3/30	1.93	2.96	9.11	14.46	63
Sheep Crossing (Baldy Snow Course)	9125	3/31	2.70	2.23	7.57	11.90	64
†. 1958-72 Average * Adjusted Average ** Data Supplied by U.S. Forest Service							



SNOW PILLOW DATA

1977



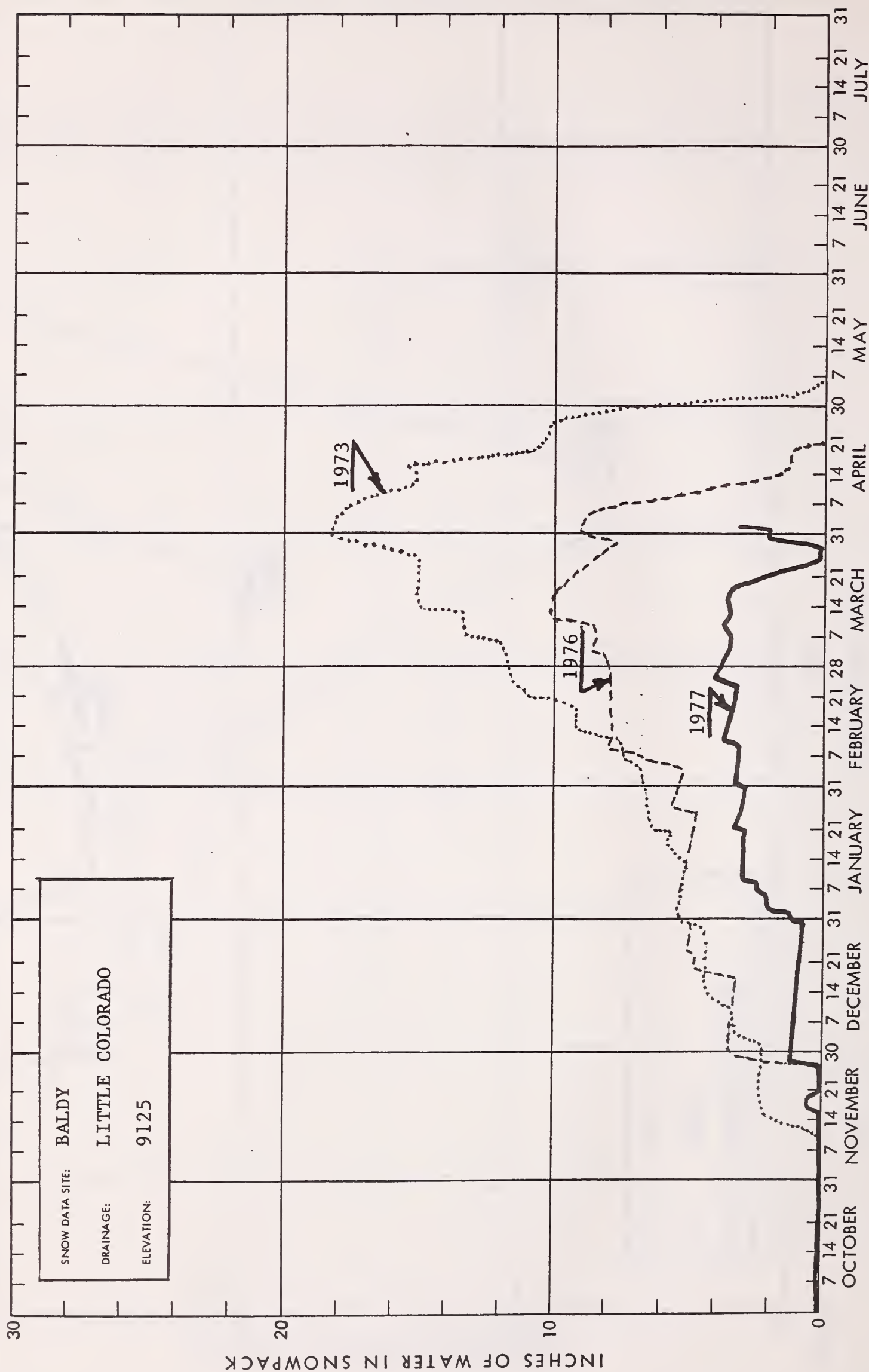
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DRAINAGE: VERDE

ELEVATION: 7500

SNOW PILLOW DATA

1977

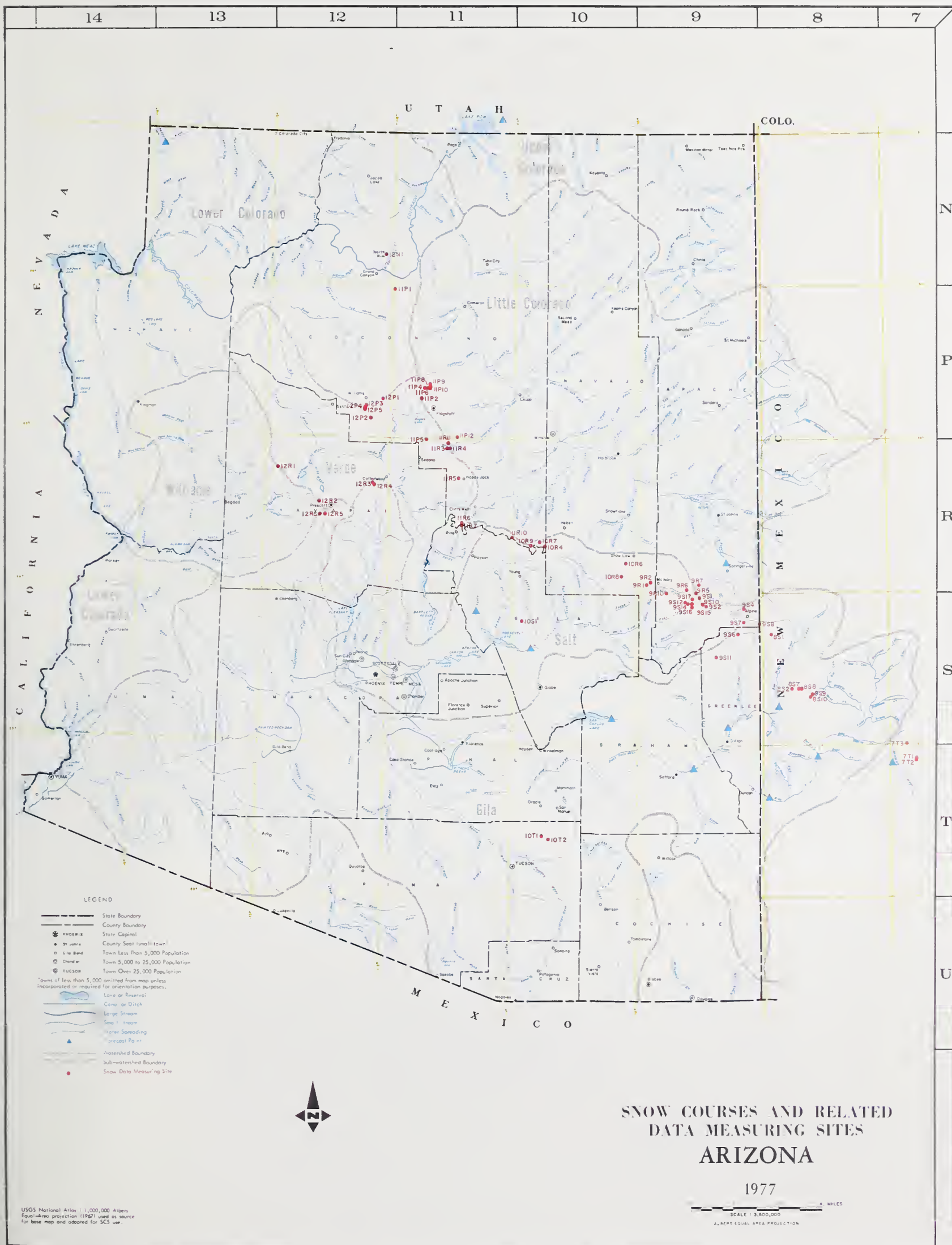


SOIL MOISTURE ABOUT APRIL 1, 1977

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †
<u>GILA RIVER</u>							
Frisco Divide	8000	48	13.3	3/31	6.4	12.2	11.6
<u>SALT RIVER</u>							
Black River Divide	9100	48	16.8	3/31	16.9	18.0	16.9
Canyon Creek	7500	48	18.3	3/30	16.6	19.5	16.1
Corduroy Creek	6000	36	13.5	3/28	9.5	14.9	10.4
McNary	7200	48	16.3	3/28	14.3	17.9	16.1
<u>VERDE RIVER</u>							
Mormon Mountain	7500	48	16.1	3/31	15.1	17.8	16.9
Newman Park	6750	48	17.7	3/31	15.3	19.5	19.4
† 1958-72 15-year average.							

1977

SNOW COURSE	SNOW SURVEYOR
Agassiz	SCS (Jorgensen and Munda) and City of Flagstaff (Talbot)
Baker Butte #1 & # 2	SCS (Enz and Winslow)
Baldy	SCS (Kyle and Burris)
Bear Wallow	Coconino National Forest (Steve Hall)
Beaver Head	Apache-Sitgreaves National Forest (Monday, Chavez, Dodson)
Bill Williams Int.	Kaibab National Forest (Garcia and Eddy)
Bill Wms. Summit	Kaibab National Forest (Garcia and Eddy)
Bright Angel	National Park Service (Allison and O'Neal)
Camp Wood	Prescott National Forest (K. Metzger)
Canyon Creek	SCS (Enz and Winslow)
Canyon Point	SCS (Enz and Winslow)
Chalender	Kaibab National Forest (Evan Boshell)
Cheese Springs	SCS (Kyle and Burris)
Copper Basin Divide	SCS (Smith and Parker)
Coronado Trail	Apache-Sitgreaves National Forest (Monday, Chavez, Dodson)
Emory Pass #1 & #2	SCS (Bray and Garcia)
Forest Dale	Bureau of Indian Affairs (Grippen and Endfield)
Ft. Apache	SCS (Kyle and Burris)
Ft. Valley	Rocky Mountain Forest and Range Experimental Station
Frisco Divide	Gila National Forest (George Gibbons)
Gaddes Canyon	SCS (Earl Barto)
Grand Canyon	National Park Service (Bryan Swift)
Hannagan Meadows	Apache-Sitgreaves National Forest (Monday, Chavez, Dodson)
Happy Jack	Coconino National Forest (Allred and Poleyquira)
Hawley Lake	Bureau of Indian Affairs (Grippen and Endfield)
Heber	SCS (Enz and Winslow)
Hummingbird	SCS (Alexander and Johnson)
I.B. #1 (Bear Paw)	SCS (Jorgensen, Munda) and City of Flagstaff (Talbot)
I.B. #2 (Snowslide)	SCS (Jorgensen, Munda) and City of Flagstaff (Talbot)
Iron Springs	SCS (Smith and Parker)
Lake Mary	SCS (Jorgensen and Munda)
Maverick Fork	SCS (Kyle and Burris)
McKnight Cabin	SCS (Alexander and Johnson)
McNary	Bureau of Indian Affairs (Grippen and Endfield)
Milk Ranch	Bureau of Indian Affairs (Grippen and Endfield)
Mingus Mountain	SCS (Earl Barto)
Mogollon	SCS (James Lyon)
Mormon Lake	SCS (Jorgensen and Munda)
Mormon Mountain	SCS (Jorgensen and Munda)
Mt. Ord	Salt River Project (Warskow) and USGS (Schumann)
Newman Park	SCS (Jorgensen and Munda)
Nutriso	Apache-Sitgreaves National Forest (Monday, Chavez, Dodson)
Promontory Butte	SCS (Enz and Winslow)
Redstone Trail	SCS (James Lyon)
Rose Canyon	Coronado National Forest (Steve Hall)
Silver Creek Divide	SCS (James Lyon)
Smith Cienega	Salt River Project (Warskow) and USGS (Schumann)
Snow Bowl #1 & #2	Coconino National Forest (R. Hughes)
State Line	Gila National Forest (George Gibbons)
Sunrise Summit	SCS (Kyle and Burris)
White Horse Lake Jct.	Kaibab National Forest (Garcia and Eddy)
White Spar	SCS (Smith and Parker)
Whitewater	SCS (Alexander and Johnson)
Williams Ski Run	Kaibab National Forest (Garcia and Eddy)
Wilson Lake	SCS (Kyle and Burris)
Workman Creek	Rocky Mountain Forest and Range Experimental Station



INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

NUMBER	NAME	SEC.	TWP.	RGE.	ELEV.	DRAINAGE	OBSERVER	RECORD BEGAN
11P10A	Agassiz	32	23N	7E	11200	Little Colorado	SCS-CF*	1968
11R7	Baker Butte #2	9	12N	9E	7700	Verde	SCS	1971
11R6PSPRT	Baker Butte	4	12N	9E	7300	Verde	SCS	1966
9S1APSPRT	Baldy	28	7N	27E	9125	Little Colorado	SCS	1950
9S15	Baldy #2	12	6N	26E	9750	Little Colorado	SCS	1963
9S16	Baldy #3	13	6N	26E	10950	Little Colorado	SCS	1963
10T1	Bear Wallow	6	12S	16E	8100	Gila	FS	1948
9S6	Beaver Head	13	4N	30E	8000	San Francisco	FS	1938
12P5	Bill William Intermediate	17	21N	2E	8550	Cataract	FS	1967
12P4	Bill Williams Summit	17	21N	2E	8950	Verde	FS	1967
9S10m	Black River Divide	10	6N	27E	9400	Salt	SCS	1954
12N1	Bright Angel	34	33N	3E	8400	Bright Angel Creek	NPS	1947
12R1	Camp Wood	3	16N	6W	5700	Verde	FS	1946
10R7M	Canyon Creek #2	18	11N	15E	7500	Little Colorado	SCS	1958
10R9P	Canyon Point	28	11N	14E	7600	Salt	SCS	1967
12P1M	Chalender	27	22N	3E	7100	Verde	FS	1947
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado	SCS	1969
12R6P	Copper Basin Divide	23	13N	3W	6720	Verde	SCS	1963
10R8m	Corduoy Creek	4	8N	21E	6000	Salt	SCS	1954
9S7	Coronado Trail	26	5N	30E	8000	San Francisco	FS	1938
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres	SCS	1967
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres	SCS	1967
10R6	Forest Dale	2	9N	21E	6430	Salt	BIA	1939
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado	SCS	1951
11P2P	Ft. Valley	22	22N	6E	7350	Little Colorado	FS	1947
8S1MP	Frisco Divide	31	6S	20W**	8000	San Francisco	FS	1938
12R4	Gaddes Canyon	11	15N	2E	7600	Verde	SCS	1954
11P1	Grand Canyon	21	30N	4E	7500	Hance Creek	NPS	1947
9S11P	Hannagan Meadows	19	3N	29E	9090	San Francisco	FS	1964
11R5P	Happy Jack	30	16N	9E	7630	Verde	FS	1951
9R10	Hawley Lake	13	7N	24E	8300	Salt	BIA	1966
10R4PSP	Heber	28	11N	15E	7600	Little Colorado	SCS	1950
8S9A	Hummingbird	19	11S	17W**	10550	Gila	SCS	1964
11P9P	Inner Basin #1	28	23N	7E	10000	Little Colorado	SCS	1967
11P8P	Inner Basin #2	28	23N	7E	9750	Little Colorado	SCS	1967
12R2	Iron Springs	22	14N	3W	6200	Little Colorado	SCS	1946
11P12	Lake Mary	21	19N	9E	6930	Little Colorado	SCS	1975
9S2APSPRT	Maverick Fork	13	6N	27E	9150	Salt	SCS	1950
7S3A	McKnight Cabin	10	15S	10W**	9300	Mimbres	SCS	1967
9R2MPSPRT	McNary	23	8N	23E	7200	Salt	BIA	1939
9R1	Milk Ranch	33	8N	23E	7000	Salt	BIA	1941
12R3	Mingus Mountain	3	15N	2E	7100	Verde	SCS	1947
8S2	Mogollon	2	11S	19W**	7000	San Francisco	SCS	1953
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado	SCS	1947
11R3MAPSPRT	Mormon Mountain	14	18N	8E	7500	Verde	SCS	1950
11R11	Mormon Mountain Summit	2	18N	8E	8470	Little Colorado	SCS	1975
9S12A	Mt. Ord	4	6N	26E	11200	Salt	SRP-SCS	1966
11P5M	Newman Park	25	19N	6E	6750	Verde	SCS	1963
9S4	Nutriso	23	6N	30E	8500	San Francisco	FS	1938
11R10	Promotory Butte	5	11N	13E	7930	Little Colorado	SCS	1973
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco	SCS	1961
10T2	Rose Canyon	15	12S	16E	7300	Gila	FS	1948
8S8PSPRT	Silver Creek Divide	4	11S	18W**	9000	San Francisco	SCS	1964
9S14A	Smith Cienega	10	6N	26E	10050	Salt	SRP-SCS	1966
11P4	Snow Bowl #1	36	23N	6E	10260	Verde	FS	1961
11P6	Snow Bowl #2	31	23N	7E	11000	Verde	FS	1965
9S8	State Line	6	6S	21W**	8000	San Francisco	FS	1938
9S17	Sunrise Summit	36	7N	26E	10600	Salt	SCS	1972
12P2P	White Horse Lake Jct.	2	20N	2E	7180	Verde	FS	1967
12R5	White Spar	19	13N	2W	6000	Verde	SCS	1963
8S10A	Whitewater	19	11S	17W**	10750	Gila	SCS	1964
12P3	Williams Ski Run	9	21N	2E	7720	Cataract	FS	1967
9R6P	Wilson Lake	4	7N	26E	9000	Salt	SCS	1966
10S1P	Workman Creek	33	6N	14E	6900	Salt	FS	1952

A Aerial Snow Depth Marker
M Soil Moisture Station
M Soil Moisture Station Only
P Precipitation Storage Gage
R Radio Telemetry

SP Snow Pressure Pillow
T Temperature
** NM Principal Meridian
* City of Flagstaff

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